



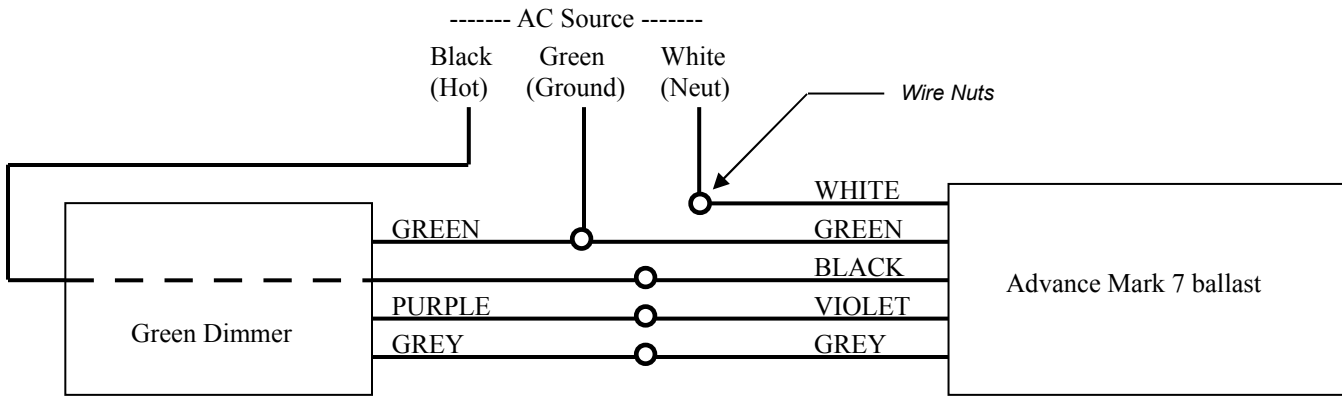
GREEN Dimmer™, Revision B Installation With an Advance Ballast



DANGER – Turn off the power at the breaker before installation of the ballast and the Green Dimmer



Visit gvcontrols.com for information on the Green Dimmer



Green Dimmer Installation

1. Turn the breaker off. Replace the existing ballast with a dimming ballast. (See ballast installation details in the *Before You Begin* section).
2. Install the GREEN Dimmer™ and the ballast in the ballast channel of the fixture. Secure the GREEN Dimmer™ to the fixture with one #8 self tapping screw on each end. Follow the mounting directions included with the ballast.
3. Using a wire nut, connect the PURPLE wire from the GREEN Dimmer™ to the VIOLET wire on the ballast. This is class 2 wiring.
4. Using a wire nut, connect the GREY wire from the GREEN Dimmer™ to the GREY wire on the ballast. This is class 2 wiring.
5. Using a wire nut, connect the BLACK (hot) wire from the AC source to the BLACK wire from the ballast. Run either black wire through the GREEN Dimmer™ before making the connection. This wire must be switched by the light switch and no larger than 18AWG **Do not remove the insulation from the portion of this wire that passes through the GREEN Dimmer!**. The GREEN Dimmer™ senses the presence of the AC without direct contact.
6. Using a wire nut, connect the WHITE (neutral) wire from the AC source to the WHITE wire on the ballast.
7. Using a wire nut or spade lugs, connect the GREEN wire (ground) from the AC source and the GREEN wire from the GREEN Dimmer™ to the metal of the fixture. The ballast is grounded by securing it to the fixture.
8. See the wiring instructions included with the ballast for hooking up the ballast to the lamp holders.
9. For best reliability, replace the sockets (lamp holders). It is possible to re-use existing program or Rapid Start Sockets, but you cannot re-use Instant Start Sockets because they short out the tube's heaters. (See the **Issue 2** subsection below for more details.)
10. Use new 4' 32W T8 tubes for best reliability. Used tubes from an instant start application can have damaged heaters that prevent use with a dimming ballast. Light artifacts may occur briefly on first dimming of new tubes.
11. Place the GREEN Dimmer™ operating instructions sticker on the light switch(s) that control GREEN Dimmers™. The GREEN Dimmer™ also works with three way (or more) switches.
12. Turn the breaker on. Verify operation by toggling the light switch on and off quickly three times for fully dim and four times for fully bright. This also synchronizes multiple GREEN Dimmers™ fed by the same switch. Use single toggles to decrease light output and dual toggles to increase light output until the desired light level is reached. This setting is remembered until changed by toggling. (See instructions below.)

Troubleshooting

- Switch toggles should be less than one half second in each position. Leave the lights off for at least 2 seconds when not toggling to avoid being misinterpreted as a toggle.
- Re-seat the tubes to be sure they are making good contact to the sockets.
- The ballast's VIOLET and GREY control wires may be disconnected from the GREEN Dimmer™ to isolate it from the GREEN Dimmer™. The ballast will go to full brightness if the ballast leads are disconnected and open, and minimum brightness if shorted together. This test should be done if the ballast fails to light, goes out, or flashes. See ballast instructions if the problem persists with the control wires disconnected.
- Verify the fixture and GREEN wires are hooked to earth ground.
- Check all wiring.

GREEN Dimmer™ Operating Instructions

When the wall switch is turned on the GREEN Dimmer™ sets the light level to the last user selected light level (about 50% from the factory). An optional fixed Turn On Level feature (six Off/On toggles noted below) causes the turn on light level to be set at the same programmable level no matter what light level the user selects after turn on.

Switch Action	Resulting Light level
Turn ON	Returns light level to the last light level or the Turn On Level
Turn OFF for > 2 seconds	Light off
Single OFF/ON toggle	Lowers light level 1 step
Two OFF/ON toggles	Raises light level 1 step
Three OFF/ON toggles	Sets light level to the minimum, light level 1, 5 to 11% depending on the ballast
Four OFF/ON toggles	Sets light level to the maximum, light level 8, 100%
Five OFF/ON toggles	Sets the GREEN Dimmer™ to the factory settings. Light level = 5, about 50% and disables the Fixed Turn On Level
Six OFF/ON toggles	Enable Fixed Turn On Level using the present light level

Note: Each Off/On toggle needs to be completed within 1 second.

Typical brightness for light level selections

Light Level	Command V	2 tube ballast light %	3 tube ballast light %	4 tube ballast light %
8	10	100	100	100
7	6.4	84	79	83
6	5.1	67	61	66
5	4	52	44	49
4	3.1	37	30	35
3	2.1	23	16	21
2	1.6	16	10	13
1	1.3	11	5	9

Before You Begin

Issue 1

The GREEN Dimmer™ works in tandem with a dimming ballast. **You will need to have a dimming ballast installed in the light fixture if there is not one already.** These instructions are for the following ballasts used with the GREEN Dimmer™:

- Advance IZT2S32SC for two tube fixtures.
<http://www.advance.philips.com/eCatalog/out/7415123723.pdf>
- Advance IZT3S32SC for three tube fixtures.
<http://www.advance.philips.com/eCatalog/out/7415123722.pdf>
- Advance IZT4S32 for four tube fixtures.
<http://www.advance.philips.com/eCatalog/out/7415123724.pdf>

Advance provides a very good installation guide for their ballasts:

<http://www.advance.philips.com/documents/uploads/literature/Instructions-ElectronicBallasts.pdf>

Advance also provides a very good installation and troubleshooting guide:

<http://www.advance.philips.com/documents/uploads/literature/Advance Dimming Guide7.pdf>

The GREEN Dimmer™ and ballast may be used with 120VAC or 277VAC 60Hz power.

Special instructions for the Advance four tube ballast only: *The four tube ballast has a ballast factor of 0.88, which means that the maximum light output is 88% of a standard ballast factor 1 ballast. The four tube ballast uses push in terminal blocks, meaning no wires are coming out of the ballast, you must supply and plug your own wires into the terminals. The installer must supply color coded solid 18AWG wires for all ballast connections and wire nuts may not be required between the GREEN Dimmer™ and the ballast. It can be helpful to make an enlarged copy of the four tube ballast wiring diagram that can be easily read in low light and update the actual wire colors used if the suggested color code is not followed. It can be easier to do the wiring of the ballast to the lamp holders on the floor instead of in the fixture installed in the ceiling.*

Issue 2

A fluorescent light fixture with a dimming ballast must have Rapid Start Sockets. The Advance Dimming Guide provides details on installing Rapid Start Sockets:

<http://www.advance.philips.com/documents/uploads/literature/Advance Dimming Guide7.pdf>

A word of caution from the Advance Dimming Guide:

Dimming ballasts and lamps must be replaced if they have been operated on instant start or shunted sockets, since they have been permanently damaged.

We recommend Miller part number L13053UN, Medium Bi-Pin Rapid Start Low Profile Slide-On/Screw On 660 Watt 600V Turn Type T8, T12 Lamp holder 1-43/64W X 1 11/64H 18 ga with nut, which are available from GoodMart:

<http://www.goodmart.com/products/miller-oem-corporation-medium-bi-pin-base-slide-t8-t12-lampholder-113053-un.htm>

These Rapid Start Sockets are compatible with **MOST** fixtures, but not all. We suggest that you buy a few to try out before you order a significant quantity.

Liability Policy

GV Controls assumes no responsibility for injury or property damage relating to the use of this product. Installation of this product infers agreement with this policy.

WARNING! Buyer/user assumes all responsibility for safety and proper use of this product.

READ AND FOLLOW THE INSTRUCTIONS TO ENSURE PROPER INSTALLATION AND APPLICATION OF THIS PRODUCT. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN FIXTURE DAMAGE, ELECTRICAL SHOCK, FIRE AND/OR INJURY.

The GREEN Dimmer™ and ballast should be installed by qualified personnel only.

The installation methods must conform to the National Electric Code, UL standards and state and local codes.

Caution: The Green Dimmer will be destroyed if the dimming leads are connected to AC power.

See cautions and warnings in the ballast installation instructions.

The Green Dimmer carries a 5 year warranty from date of manufacture against defects in material or workmanship for operation over a case temperature range of 0 to 50 degrees C.

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